

Title (en)  
EARBUDS WITH ACOUSTIC INSERT

Title (de)  
ÖHRHÖRER MIT AKUSTIKEINSATZ

Title (fr)  
ÉCOUTEURS AVEC INSERT ACOUSTIQUE

Publication  
**EP 3151584 B1 20190612 (EN)**

Application  
**EP 16190260 A 20160923**

Priority  
• US 201562235205 P 20150930  
• US 201562235213 P 20150930  
• US 201562235219 P 20150930  
• US 201562235226 P 20150930  
• US 201662384114 P 20160906

Abstract (en)  
[origin: EP3151584A2] An earbud includes a housing having an ear portion and a stem portion, the housing comprises a driver assembly positioned within the housing forming a front volume in front of the driver and a back volume behind the driver. An acoustic insert is positioned behind the driver assembly and attached to an interior surface of the housing such that it forms a bass channel that is routed from the back volume to a vent in the housing, the vent being part of a multiport vent. The acoustic insert is formed from a carbon doped plastic that absorbs laser energy,

IPC 8 full level  
**H04R 1/10** (2006.01); **H04R 1/28** (2006.01); **H04R 5/033** (2006.01)

CPC (source: CN DK EP KR US)  
**A45C 11/00** (2013.01 - EP KR US); **A45C 11/24** (2013.01 - US); **A45C 13/005** (2013.01 - US); **A45C 13/02** (2013.01 - EP US); **A45C 13/1069** (2013.01 - DK EP US); **B65D 25/02** (2013.01 - US); **B65D 43/16** (2013.01 - US); **H01R 13/521** (2013.01 - US); **H02J 7/0042** (2013.01 - CN); **H02J 7/0044** (2013.01 - US); **H02J 50/10** (2016.02 - KR US); **H04B 1/3888** (2013.01 - US); **H04B 5/79** (2024.01 - US); **H04R 1/02** (2013.01 - US); **H04R 1/1016** (2013.01 - EP KR US); **H04R 1/1025** (2013.01 - CN EP KR US); **H04R 1/1041** (2013.01 - EP KR US); **H04R 1/1058** (2013.01 - US); **H04R 1/1075** (2013.01 - US); **H04R 1/2826** (2013.01 - US); **H04R 1/345** (2013.01 - US); **H04R 5/033** (2013.01 - EP KR US); **H04R 9/025** (2013.01 - US); **H04R 9/06** (2013.01 - US); **A45C 2011/001** (2013.01 - EP KR US); **A45C 2013/026** (2013.01 - EP US); **F16B 2200/83** (2023.08 - US); **H02J 7/00034** (2020.01 - US); **H04B 1/385** (2013.01 - US); **H04M 1/6033** (2013.01 - US); **H04R 1/2857** (2013.01 - US); **H04R 2201/105** (2013.01 - CN US); **H04R 2201/109** (2013.01 - KR); **H04R 2420/03** (2013.01 - KR); **H04R 2420/07** (2013.01 - KR US); **H04R 2460/03** (2013.01 - US); **H04R 2460/09** (2013.01 - US); **H04R 2460/17** (2013.01 - EP US)

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Designated contracting state (EPC)  
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DOCDB simple family (publication)  
**EP 3151584 A2 20170405; EP 3151584 A3 20170809; EP 3151584 B1 20190612;** AU 2016231629 A1 20170413; AU 2016231629 B2 20180816; AU 2016231631 A1 20170413; AU 2016231631 B2 20170810; AU 2016231632 A1 20170413; AU 2016231632 B2 20180419; AU 2016231633 A1 20170413; AU 2016231633 B2 20180809; AU 2017279776 A1 20180125; AU 2017279776 B2 20190131; AU 2019200365 A1 20190207; AU 2019200365 B2 20200213; AU 2019200416 A1 20190207; AU 2019200416 B2 20200702; AU 2019200417 A1 20190207; AU 2019200417 B2 20190307; AU 2019202866 A1 20190516; AU 2019202866 B2 20190620; AU 2020201857 A1 20200514; AU 2020201857 B2 20210729; AU 2020244538 A1 20201029; AU 2020244538 B2 20220804; AU 2020244539 A1 20201029; AU 2020244539 B2 20220804; AU 2022263480 A1 20221208; AU 2022263480 B2 20240307; AU 2024203873 A1 20240627; BR 112018003113 A2 20180724; BR 112018003113 B1 20210413; CN 106551494 A 20170405; CN 106551494 B 20190215; CN 106559719 A 20170405; CN 106559719 B 20191224; CN 106559720 A 20170405; CN 106559720 B 20201110; CN 106559721 A 20170405; CN 106559721 B 20190702; CN 106560113 A 20170412; CN 106560113 B 20190510; CN 106560114 A 20170412; CN 106560114 B 20220503; CN 106617580 A 20170510; CN 106617580 B 20190521; CN 108272201 A 20180713; CN 109480425 A 20190319; CN 109480425 B 20210525; CN 109512115 A 20190326; CN 109512115 B 20200605; CN 109662423 A 20190423; CN 109662423 B 20210618; CN 109769168 A 20190517; CN 109769168 B 20210323; CN 110035348 A 20190719; CN 110035348 B 20220802; CN 110115416 A 20190813; CN 110150818 A 20190823; CN 110150818 B 20210824; CN 110213688 A 20190906; CN 110292239 A 20191001; CN 110292239 B 20211029; CN 110430494 A 20191108; CN 110430494 B 20220527; CN 113080588 A 20210709; CN 113080588 B 20231128; CN 114885244 A 20220809; CN 114979884 A 20220830; CN 115243147 A 20221025; CN 206101919 U 20170419; CN 206101920 U 20170419; CN 206150698 U 20170510; CN 206150733 U 20170510; CN 206195049 U 20170524; CN 206314705 U 20170711; CN 206314706 U 20170711; CN 206314707 U 20170711; CN 206354604 U 20170728; CN 206603376 U 20171103; CN 206620243 U 20171107; CN 206949751 U 20180202; CN 208029042 U 20181030; DK 179467 B1 20181121; DK 179609 B1 20190227; DK 179726 B1 20190417; DK 179735 B1 20190430; DK 179735 B8 20190521; DK 179736 B1 20190430; DK 179736 B8 20190521; DK 179737 B1 20190430; DK 179820 B1 20190711; DK 202170629 A1 20220107; DK 202370570 A1 20231215; DK 3151582 T3 20201012; EP 3151582 A1 20170405; EP 3151582 B1 20200812; EP 3151583 A2 20170405; EP 3151583 A3 20170809; EP 3151583 B1 20220202; EP 3153056 A1 20170412; EP 3153056 B1 20181205; EP 3153057 A1 20170412; EP 3153057 B1 20201118; EP 3154275 A1 20170412; EP 3154275 B1 20190918; EP 3157265 A2 20170419; EP 3157265 A3 20170719; EP 3157265 B1 20191023; EP 3473130 A1 20190424; EP 3473130 B1 20210804; EP 3505001 A1 20190703; EP 3505001 B1 20201118; EP 3506647 A1 20190703; EP 3506647 B1 20220720; EP 3541092 A1 20190918; EP 3541092 B1 20210811; EP 3541093 A1 20190918;

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